

WESTERN ALLIES OF CAREX PENNSYLVANICA

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While typical *Carex pennsylvanica* Lam. is found in the wooded regions west of the Mississippi River as far as North Dakota, it is essentially an eastern species. The plant of the western prairies, plains and foothills heretofore referred to that species is well marked, and distinguished from the eastern plant by a number of characters. In addition, two plants of the Pacific coast, geographically widely separated, have heretofore been distinguished, but as they have rarely been collected, the points of difference between them and the more eastern species have never been fully gone into.

One taking up the group soon notices that all three of the western plants differ constantly from the eastern species in the larger perigynia. Those of the western species average fully 2 mm. in width, while those of the eastern species are about 1.5 mm. The western species, too, have the sides so convex that the body of the perigynia appears globose. In the eastern species the sides are so much less convex that the body of the perigynia appears globose-triangular.

The heretofore unnamed species, described below and one of the far western species (*Carex verecunda* Holm) also differ from *Carex pennsylvanica* Lam. and the other far western species (*Carex vespertina* (Bailey) Howell) in having the beak of the perigynia strongly whitish tipped and deeply bidentate. The two last-named species have the beak of the perigynia but little whitish tipped and only shallowly bidentate. The newly described species also has short stiff culms as compared with the taller, and more slender culms of *Carex pennsylvanica*. Other points of difference between the four species are shown in the following key and description:

Mature perigynia 2 mm. wide or more, the body round in cross section

Beak of perigynium deeply bidentate, strongly whitish tipped

Pistillate spikes subglobose, sessile.....*C. heliophila*.

Lower pistillate spike oblong, peduncled.....*C. verecunda*.

- Beak of perigynium shallowly bidentate, the teeth little whitish.....*C. vespertina.*
 Mature perigynia 1.5 mm. wide, the body round-triangular in cross-section.....*C. pennsylvanica.*

Carex heliophila n. sp.

In small to medium-sized clumps, from slender, more or less elongated rootstocks, stoloniferous but the stolons less conspicuous than in *C. pennsylvanica* Lam.; culms 12–25 cm. high, phyllopodic, reddish-brown and often strongly fibrillose at base, exceeding all or most of the leaves, slender but stiff, wiry and erect, rough on the angles above. Leaves with well-developed blades 5–10 to a fertile culm, the blades flat with slightly revolute margins, 1–2 mm. wide, 4–20 cm. long, much roughened, the lower sheaths frequently breaking and becoming filamentose; terminal spike staminate or occasionally with a few perigynia towards apex, 8–20 mm. long, 3–6 mm. wide, more or less peduncled, many flowered, the scales ovate, obtusish to acute or short cuspidate, reddish-brown with lighter mid-veins and conspicuous white hyaline margins; pistillate spikes one or two or rarely three, from contiguous to more or less strongly separate, globular, and sessile or nearly so, 4–6 mm. long, closely 5–15-flowered in several ranks, the perigynia ascending; bracts not sheathing, scale-like, or occasionally green and prolonged, but shorter than inflorescence; scales ovate, acute, or short cuspidate, varying from obtusish to strongly cuspidate, reddish-brown with 1–3-nerved lighter center and white hyaline sides (but scarcely apex), from slightly longer to slightly shorter than, but not enveloping or concealing perigynia; perigynia puberulent, dull green, 3.5 mm. long, the body short oval, 2.25 mm. long, 2 mm. wide, 2-ribbed, otherwise nerveless, globose in cross section, strongly stipitate (0.5 mm. long.), abruptly contracted into the serrulate strongly bidentate beak, 0.75 mm. long, the teeth slender, readily breaking, strongly whitish; achenes triangular with strongly convex sides, closely enveloped by perigynia, 2 mm. long, 1.75 mm. wide, truncate, round-tapering at base; style slender, scarcely enlarged at base, readily detached; stigmas three.

Of the numerous specimens of this species examined, I designate a specimen collected on the open prairie, near Lee's Summit, Jackson County, Missouri, on May 9, 1897, now in my own herbarium, as the type.

SPECIMENS EXAMINED

ILLINOIS: Oquawka, *Patterson*, June, 1874 (C).*

IOWA: Ames, *Ball* 7, May 10, 1898 (N. Y.).*

MISSOURI: Greenwood, *Bush* 6688 and 6688A, May 10, 1912.

KANSAS: Riley County, *Norton* 552, Apl. 4, 1895 (N. Y.) and 552A, May 18, 1895 (N. Y.).

NEBRASKA: Ashland, *Williams*, May 19, 1890 (M);* Ft. Niobrara, *Wilcox*, May, 1888 (C); Creete, *Swezey* 147, Apl. 28, 1890 (C); Alliance, *Wambauch* (C); Hay Springs, *MacDougal* 63, June 6, 1901 (N. Y.); *Hayden* (N. Y.).

SOUTH DAKOTA: Brookings, *Williams*, May 22, 1893 (M); Custer, *Rydberg* 1080, June 3, 1892 (N. Y. and C), and 1079, Aug. 1, 1892 (N. Y.); Brookings, *Carter*, May 6, 1897 (N. Y.).

NORTH DAKOTA: Minot, Ward County, *Lunell*, June 5, 1909 (M); Oaks, *Williams*, June 1, 1896 (M); Fargo, *Bolley*, May 27, 1891 (N. Y.).

CANADA: Qu'Appelle Valley, *Macoun* 50, June 21, 1879 (N. Y.).

WYOMING: Big Creek, Carbon Co., *Nelson*, 3966, Aug. 11, 1897 (C); Laramie Hills, *Nelson* 69, May 25, 1894 (C).

COLORADO: Horsetooth Gulch, *Crandall* 2573, May 15, 1897 (N. Y.); Veta Pass, *Rydberg & Vreeland* 6455, June 20, 1900 (N. Y.); Crystal Park, *Clements* 166, June 26, 1901 (N. Y.); Lorimer County, *Crandall*, Apl. 25, 1891 (N. Y.); Ojo, *Rydberg & Vreeland* 6464, May 26, 1900 (N. Y.); Headwaters of Pass Creek, *Rydberg & Vreeland* 6471, June 30, 1900 (N. Y.); Ft. Collins, *Cowen* 2575, May 9, 1896 (N. Y.); Dixon Canon, *Crandall* 2574, Apl. 16, 1898 (N. Y.); New Windsor, *Osterhout* 2283, June 2, 1900 (N. Y.), Colorado Springs, *Jones* 34, May 9, 1879 (N. Y.).

NEW MEXICO: Raton, *Standley* 6349, June 21-2, 1911 (N);* Tierra Amarilla, *Eggleston* 6577, Apl., 1911 (N); Chama, *Eggleston* 6663, May 26, 1911 (N); Chama, *Standley* 6749, July 9, 1911 (N); "New Mexico," *Thurber* (N. Y.).

* C = Herbarium of Columbia University; N. Y. = Herbarium of New York Botanical Garden; M = Herbarium of K. K. Mackenzie; N. = U. S. National Herbarium.